

1. Simplify the expression below and choose the interval the simplification is contained within.

$$4 - 20^2 + 2 \div 6 * 16 \div 7$$

- A. $[-395.45, -394.63]$
- B. $[403.57, 404.34]$
- C. $[-396.71, -395.71]$
- D. $[404.69, 404.85]$
- E. None of the above

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2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{576}{49}}$$

- A. Rational
- B. Whole
- C. Irrational
- D. Not a Real number
- E. Integer

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3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 + 44i}{-1 + 5i}$$

- A. $a \in [-55.5, -53]$ and $b \in [8.74, 8.84]$
- B. $a \in [6, 7.5]$ and $b \in [-314.01, -313.96]$
- C. $a \in [165, 167]$ and $b \in [-12.08, -12.05]$
- D. $a \in [6, 7.5]$ and $b \in [-12.08, -12.05]$

E. $a \in [-11, -10]$ and $b \in [8.65, 8.71]$

4. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-10 + 2i)(-4 + 3i)$$

- A. $a \in [34, 36]$ and $b \in [-44, -34]$
B. $a \in [42, 50]$ and $b \in [-25, -21]$
C. $a \in [34, 36]$ and $b \in [34, 39]$
D. $a \in [38, 42]$ and $b \in [-9, 10]$
E. $a \in [42, 50]$ and $b \in [17, 27]$
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5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-1815}{11}} + \sqrt{0}i$$

- A. Irrational
B. Pure Imaginary
C. Nonreal Complex
D. Not a Complex Number
E. Rational
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6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-2 + 8i)(5 + 7i)$$

- A. $a \in [-68, -63]$ and $b \in [-26.15, -24.4]$
B. $a \in [46, 49]$ and $b \in [53.91, 54.51]$
C. $a \in [-68, -63]$ and $b \in [25.99, 27.39]$

D. $a \in [-18, -5]$ and $b \in [55.28, 56.57]$

E. $a \in [46, 49]$ and $b \in [-54.41, -53.76]$

7. Simplify the expression below and choose the interval the simplification is contained within.

$$18 - 12^2 + 7 \div 8 * 13 \div 16$$

A. $[-125.62, -124.54]$

B. $[-126.26, -125.96]$

C. $[161.86, 162.42]$

D. $[162.05, 162.91]$

E. None of the above

8. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{2}{-11} + 81i^2$$

A. Pure Imaginary

B. Nonreal Complex

C. Rational

D. Irrational

E. Not a Complex Number

9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{63 + 22i}{-5 - i}$$

A. $a \in [-13.39, -12.83]$ and $b \in [-3, -1]$

- B. $a \in [-13.39, -12.83]$ and $b \in [-48, -45]$
 - C. $a \in [-12.9, -12.46]$ and $b \in [-23.5, -21.5]$
 - D. $a \in [-337.01, -336.76]$ and $b \in [-3, -1]$
 - E. $a \in [-11.33, -11.17]$ and $b \in [-8.5, -6]$
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10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{-990}{5}}$$

- A. Whole
 - B. Integer
 - C. Irrational
 - D. Rational
 - E. Not a Real number
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